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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,070	11/20/2003	Alex Chen	TUC920030128US1	2275
46917 7590 07/03/2008 KONRAD RAYNES & VICTOR, LLP. ATTN: IBM37 315 SOUTH BEVERLY DRIVE, SUITE 210 BEVERLY HILLS, CA 90212				
EXAMINER				
TANG, KENNETH				
ART UNIT		PAPER NUMBER		
2195				
MAIL DATE		DELIVERY MODE		
07/03/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/719,070

Applicant(s)

CHEN ET AL.

Examiner

KENNETH TANG

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9 and 10 is/are rejected.
- 7) ☐ Claim(s) 8 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 4/11/08

DETAILED ACTION

1. Claims 1-11 are presented for examination. Applicant has cancelled claims 12-30 in the Amendment on 4/11/08.
2. This action is in response to the Amendment/Replay on 4/11/08. Applicant's arguments have been fully considered but were not found to be persuasive.

Claim Objections

3. Claims 2 and 4 are objected to because of the following informalities:
 - a. In line 3 of claims 2 and 4, the term "in enqueued" should be changed to "is enqueued" to correct the grammatical error. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schober (US 7,237,016 B1) in view of DeKoning et al. (hereinafter DeKoning) (US 6,457,098 B1).**
5. As to claim 1, Schober teaches a method comprising:

attempting in a first attempt (resource request) to acquire a first resource for a task requiring both a first resource and a second resource (an arbiter arbitrates resource requests for resources) (col. 2, lines 42-60);

enqueueing said task on a first queue if said first attempt to acquire said first resource for said task fails (place the resource request within a first queue associated with a first resource if the first resource fails because it is unavailable) (col. 2, lines 50-52);

attempting in a first attempt to acquire said second resource for said task (col. 2, lines 52-54);

enqueueing said task on a second queue if said first attempt to acquire said second resource for said task fails (place the resource request within a second queue associated with a second resource if the second resource is unavailable) (col. 2, lines 52-54); and

6. In summary of the above citations, Schober teaches a first resource having a first queue and a second resource having a second queue with an arbiter that manages the resource request for attempts. The task is enqueued on the first queue if the first resource is unavailable and thus fails to acquire it. Similarly, the task is enqueued on the second queue if the second resource is unavailable and thus fails to acquire it.

7. Schober does teach issuing a grant upon availability of both the first and second resources such that it waits until there is positive determination for each resource availability checks and should any resource be unavailable, the request is returned (col. 23, lines 27-28, col. 15, lines 16-22). However, Schober is silent in acquiring in a second attempt said first resource for said task

and releasing said first resource for said task if said first attempt to acquire said second resource for said task fails.

8. DeKoning teaches coordination between a primary controller 118.1 (first resource) and a secondary controller 118.2 (second resource) with many different types of scenarios of interactions. One scenario taught in particular provides recovery techniques involves a primary controller determining that a failure has occurred with the secondary controller, and if so, the primary controller forces the release of the resource via a semaphore (col. 14, lines 58-66). If the first resource is successfully acquired but the second resource has failed, the first resource performs the release and the system can start over again with another attempt until the first resource is successfully acquired, followed by successfully acquiring the second resource.

9. It is inherent that after the first resource is acquired, the task in the first queue (acting as a wait queue) needs to be removed because it is no longer “failed” or waiting to be acquired.

10. Schober and DeKoning are analogous art because they are both relate to coordination between storage subsystems. Schober teaches that the physical properties of the system can support many systems including storage subsystems (col. 2, lines 10-22). Therefore, the resources of Schober’s system (first resource, second resource, etc.) can be applied to storage subsystems, and particularly, Schober’s first resource and second resource can be referred to DeKoning’s primary controller and secondary controller, respectively.

11. One of ordinary skill in the art would have known to modify the resources of Schober such that it would allow for acquiring in a second attempt said first resource (primary controller)

for said task and releasing said first resource for said task if said first attempt to acquire said second resource (secondary controller) for said task fails, as taught in DeKoning.

12. The suggestion/motivation for doing so would have been to provide the predicted result of providing standard error check and recovery techniques for enhancing the message exchange protocol between the first and second resources (col. 14, lines 58-67 through col. 15, lines 1-3).

13. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schober and DeKoning to obtain the invention of claim 1.

14. Claims 2-7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schober (US 7,237,016 B1) in view of DeKoning et al. (hereinafter DeKoning) (US 6,457,098 B1), and further in view of Ben-Shachar et al. (hereinafter Ben-Schachar) (US 2001/0010053 A1).

15. As to claim 2, Schober teaches using a priority scheme for the resource allocation (col. 8, lines 27-40). The first resource fails when a second task occurs because it has already moved on to the second task. Schober and DeKoning are silent in teaching that tasks having the same priority be grouped/contained in the same queue. However, Ben-Shachar teaches that a wait queue 430 may include three internal queues, one for each priority level, high priority 432, medium priority 434, and low priority 436. Similarly, the idle queue 438 may include three

internal queues, one for each priority level, high priority 440, medium priority 442, and low priority 444 (see paragraph [0155]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the queues for the resources of Schober in view of DeKoning such that it would include the three internal queues of high priority, medium priority and low priority. The suggestion/motivation for doing so would have been to provide the predicted result of ensuring efficient workload balancing ([0054], [0070]). Therefore, it would have been obvious to combine Schober, DeKoning and Ben-Shachar to obtain the invention of claim 2.

16. As to claim 3, Schober, DeKoning, and Ben-Shachar teaches the method of claim 2 wherein said first task has a first priority, said method further comprising:

attempting in a first attempt to acquire said first resource for a third task requiring said first resource and having a second priority higher (medium priority) than said first priority (low priority) (Ben-Shachar, [0155]), and

enqueueing said third task on a third queue (medium priority queue) (Ben-Shachar, [0155]) if said first attempt to acquire said first resource for said third task fails (Schober, col. 2, lines 42-60, see DeKoning, col. 14, lines 58-66, and see explanation of rejection of claim 1); and

wherein said first attempt to acquire said first resource for said first task fails when said third task having said second priority (medium priority) is in enqueued on said third queue (medium priority queue) (Ben-Shachar, [0155]).

17. As to claim 4, Schober (col. 2, lines 42-60), DeKoning (col. 14, lines 58-66), and Ben-Shachar ([0155]) teaches the method of claim 3 wherein said first task has a first priority, and wherein said first attempt to acquire said second resource fails when a fourth task having said first priority (low priority) is enqueued on said second queue (low priority queue of the second resource).

18. As to claim 5, Schober, DeKoning, and Ben-Shachar teaches the method of claim 4 wherein said first task has a first priority, said method further comprising:

attempting in a first attempt to acquire said second resource for a fifth task requiring said second resource and having a second priority (medium priority) (Ben-Shachar, [0155]) higher than said first priority (low priority) ([0155]) (Ben-Shachar, [0155]), and

enqueueing said fifth task (having a medium priority) (Ben-Shachar, [0155]) on a fourth queue (medium priority queue) (Ben-Shachar, [0155]) if said first attempt to acquire said second resource for said fifth task fails (Schober, col. 2, lines 42-60, see DeKoning, col. 14, lines 58-66, and see explanation of rejection of claim 1); and

wherein said first attempt to acquire said second resource for said first task fails when said fifth task having said second priority (medium priority) (Ben-Shachar, [0155]) is in enqueued on said fourth queue (medium priority queue) (Ben-Shachar, [0155]).

19. As to claim 6, Schober and DeKoning teaches the method of claim 5 further comprising:

acquiring in a third attempt said first resource for said first task (col. 2, lines 50-52 of Schober);

attempting to acquire in a second attempt said second resource for said first task (col. 2, lines 52-54 of Schober); and

20. DeKoning teaches releasing said first resource for said first task if said second attempt to acquire said second resource for said task fails (col. 14, lines 58-66).

21. Schober teaches a first resource having a first queue and a second resource having a second queue with an arbiter that manages the resource request for attempts. The task is enqueued on the first queue if the first resource is unavailable and thus fails to acquire it. Similarly, the task is enqueued on the second queue if the second resource is unavailable and thus fails to acquire it. DeKoning teaches coordination between a primary controller 118.1 (first resource) and a secondary controller 118.2 (second resource) with many different types of scenarios of interactions. One scenario taught in particular provides recovery techniques involves a primary controller determining that a failure has occurred with the secondary controller, and if so, the primary controller forces the release of the resource via a semaphore (col. 14, lines 58-66). If the first resource is successfully acquired but the second resource has failed, the first resource performs the release and the system can start over again (indefinite amount of attempts) with another attempt until the first resource is successfully acquired, followed by successfully acquiring the second resource.

22. As to claim 7, Schober and Dekoning teaches the method of claim 5 further comprising:

acquiring in a third attempt said first resource for said first task (Schober, col. 2, lines 50-52);

acquiring in a second attempt said second resource for said first task (Schober, col. 2, lines 52-54);

removing said first task from said second queue (because second resource was acquired, no longer failed or on the “wait” queue anymore) (similar reasoning made in the rejection of claim 1); and

dispatching said first task to be completed using said first and second resources (performed by arbiter/resource allocator) (Schober, col. 2, lines 44-50).

23. Schober teaches a first resource having a first queue and a second resource having a second queue with an arbiter that manages the resource request for attempts. The task is enqueued on the first queue if the first resource is unavailable and thus fails to acquire it. Similarly, the task is enqueued on the second queue if the second resource is unavailable and thus fails to acquire it. DeKoning teaches coordination between a primary controller 118.1 (first resource) and a secondary controller 118.2 (second resource) with many different types of scenarios of interactions. One scenario taught in particular provides recovery techniques involves a primary controller determining that a failure has occurred with the secondary controller, and if so, the primary controller forces the release of the resource via a semaphore (col. 14, lines 58-66). If the first resource is successfully acquired but the second resource has failed, the first resource performs the release and the system can start over again (*indefinite*

amount of attempts) with another attempt until the first resource is successfully acquired, followed by successfully acquiring the second resource.

24. As to claim 9, Schober teaches the method of claim 7 wherein said third attempt is initiated by the second resource becoming free (as found in the free list 206) (col. 9, line 58).

25. As to claim 10, Schober teaches the method of claim 7 wherein said third attempt is initiated by the first resource becoming free (from the free list 206) (col. 9, line 58).

Allowable Subject Matter

26. Claims 8 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, as well as overcoming the claim objections and any 35 USC 101 rejections set forth in this office action.

Response to Arguments

27. During patent examination, the pending claims must be “given their broadest reasonable interpretation consistent with the specification.” *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d

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1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969).

28. The Applicant has not amended the claims nor provides any arguments regarding the claim objections set forth in the previous office action. The Applicant is required to amend the claims to overcome the objection or provide arguments against the claim objections by the Examiner.

29. *Applicant's sole argument (page 7 of the Remarks) is that the Examiner has failed to explain what is meant by the primary controller 118.1 being "successfully acquired." Acquired by what and for what purpose? The Examiner has failed to explain what is meant by the primary controller 118.1 releasing itself. The Examiner has failed to explain what is meant by the secondary controller 118.2 being "successfully acquired." Again, acquired by what and for what purpose?*

As pertaining to the reference of DeKoning, the meaning of "successfully acquired" is not a failure. A "failure" vs. being "successfully acquired" are opposites of each other. Applicant argues more specific than what the claims require. Therefore, Applicant's arguments were not found to be persuasive.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Kenneth Tang/

Examiner, Art Unit 2195

/Li B. Zhen/

Primary Examiner, Art Unit 2194